***Streptococcus uberis* intramammary challenge**

**Different infection kinetics after an intramammary challenge with *in vitro* *Streptococcus uberis* biofilm forming and non-biofilm forming strains in dairy cattle.**

Rosa Collado1\*†, Carlos Montbrau †, Ricard March1, Antoni Prenafeta1

1 Hipra Scientific, S.L.U., Avda. La Selva 135, 17170 Amer, Spain.

\*For correspondence; e-mail: rosa.collado@hipra.com

†These authors contributed equally to the work.

ABSTRACT

The aim of this study was to clarify whether the *in vitro* biofilm formation ability of *Streptococcus uberis* has any impact on the development of an intramammary infection. With this objective in mind, two *S. uberis* strains isolated from clinical mastitis cases were selected, one as a biofilm forming strain (SU2H) and the other as a non-biofilm forming strain (0140J) on a polystyrene 96-well microplate assay. Then, two groups of four cows received an intramammary challenge with the same dose of each strain. Following the intramammary challenge, clinical signs of mastitis, milk production, somatic cell count (SCC) rectal temperature and bacterial cell count in milk were recorded daily, for sixteen days post-infection. Results showed that the two strains exhibited clear differences in pathogenicity. Significant differences in bacterial count, SCC, temperature and milk yield between groups were recorded, suggesting that biofilm formation ability could confer a different colonisation and persistence strategy in the mammary gland, although it cannot be ruled out that other virulence factors could be involved.